

The listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for producing a halftone image ~~using a halftone screen~~, said method comprising overlapping at least a portion of a first dot of a halftone cell with at least a portion of a second dot of said halftone cell.

2. (Currently Amended) The method according to claim 1, further comprising differing ~~pitches frequencies~~ of said first and second dots.

3. (Original) The method according to claim 1, further comprising differing shapes of said first and second dots.

4. (Original) The method according to claim 3, further comprising selecting said shapes of said first and second dots from a group consisting of: elliptical, triangular, circular, rectangular, diamond and linear shapes.

5. (Original) The method according to claim 1, further comprising differing tonal characteristics of said first and second dots.

6. (Currently Amended) The method according to claim 1, further comprising differing ~~pitches frequencies~~ of said first and second dots.

7. (Currently Amended) The method according to claim 1, further comprising orienting an a first angle of said first dot differently than a second angle of said second dot relative to a first side of said halftone cell.

8. (Currently Amended) A method for producing a halftone image ~~using a halftone screen~~, said method comprising placing a first and a second dot within a halftone cell, wherein said first and second halftone dots are dissimilar.

9. (Currently Amended) The method according to claim 8, further comprising differing pitches frequencies of said first and second dots.

10. (Original) The method according to claim 8, further comprising differing shapes of said first and second dots.

11. (Currently Amended) The method according to claim 10, further comprising selecting said shapes of said first and second dots from a group consisting of: elliptical, cross, triangular, circular, rectangular, diamond and linear shapes.

12. (Original) The method according to claim 8, further comprising differing tonal characteristics of said first and second dots.

13. (Original) The method according to claim 8, further comprising orienting an angle of said first dot differently than a second angle of said second dot relative to a first side of said halftone cell.

14. (Currently Amended) An apparatus comprising a ~~recordable medium~~ printing plate having a first and a second dot within a halftone cell, wherein at least a portion of said first dot overlaps at least a portion of said second dot.

15. (Original) The apparatus according to claim 14, wherein each of said first and second dots have different shapes.

16. (Currently Amended) The apparatus according to claim 15, wherein said different shapes are selected from a group consisting of: elliptical, triangular, rectangular, circular, cross, diamond and linear shapes.

17. (Original) The apparatus according to claim 14, wherein each of said first and second dots have different tonal characteristics.

18. (Currently Amended) The apparatus according to claim 14, wherein each of said first and second dots have different pitches frequencies.

19. (Original) The apparatus according to claim 14, wherein said first dot is oriented at a different angle than said second dot relative to a first side of said halftone cell.

20. (Currently Amended) An apparatus comprising a ~~recordable medium~~ printing plate having a first and a second dot within a halftone cell, wherein said first and second dots are dissimilar.

21. (Currently Amended) The apparatus according to claim 20, wherein each of said first and second dots has a different pitch frequency.

22. (Original) The apparatus according to claim 20, wherein each of said first and second dots has a different shape.

23. (Previously Amended) The apparatus according to claim 22, wherein said different shape is selected from a group consisting of: elliptical, triangular, rectangular, circular, diamond and linear shapes.

24. (Original) The apparatus according to claim 20, wherein each of said first and second dots has a different tonal characteristic.

25. (Original) The apparatus according to claim 20, wherein said first dot is oriented at a different angle than said second dot relative to a first side of said halftone cell.

26. (Previously Amended) An apparatus comprising a halftone screen having a halftone cell derived from a threshold equation, wherein a fold function of said threshold equation generates at least one dot within said halftone cell according to $\text{fold}(x) = [[[x] - 1/3] - 1/3] - 1/3 * 3$.

27. (Original) A program product, comprising:

 a program configured to place a first and a second dot within a halftone cell, wherein at least a portion of said first dot overlaps at least a portion of said second dot; and

 a signal bearing medium bearing said program.

28. (Previously Amended) The program product of claim 27, wherein said signal bearing medium includes at least one of a recordable medium and a transmission-type medium.

29. (Canceled)

30. (Currently Amended) A program product, comprising:

a program configured to place a first and a second dot within a halftone cell, wherein said first and second dots are dissimilar in at least one characteristic selected from a group consisting of: shape, pitch frequency, tone and orientation; and

a signal bearing medium bearing said program.

31. (Previously Amended) The program product of claim 30, wherein said signal bearing medium includes at least one of a recordable medium and a transmission-type medium.

32. (Canceled)

33. (Currently Amended) A method for producing a halftone image using a program that executes on a processor, comprising creating a halftone screen printing plate including dots having different frequencies.

34. (Currently Amended) The method of claim 33, wherein creating said halftone screen printing plate further comprises integrating both fine and coarse pitch cells frequency dots.

35. (Currently Amended) The method of claim 33, wherein creating said array printing plate further comprises overlapping at least a portion of a first dot of a halftone cell of said ~~halftone screen~~ printing plate with at least a portion of a second dot of said halftone cell.

36. (Currently Amended) The method of claim 33, wherein creating said array printing plate further comprises placing a first and a second dot within a halftone cell of said ~~halftone screen~~ printing plate, wherein said first and second halftone dots are dissimilar.

37. (Currently Amended) The method of claim 33, wherein ~~producing~~ creating said printing plate ~~halftone screen~~ further comprises creating at least one of a halftone screen and an threshold array, both said array and said screen including dots having different frequencies.

38. (Cancelled)

39. (Currently Amended) The apparatus of claim 38 67, wherein said array ~~has a portion of dots include a frequency selected from a group consisting of at least one of: a coarse pitch, a fine pitch and an integrated pitch.~~

40. (Currently Amended) The apparatus of claim 38 67, wherein said array has printing plate a halftone cell that includes at least a portion of a first dot of said halftone cell being overlapped with at least a portion of a second dot of said halftone cell.

41. (Currently Amended) The apparatus of claim 38 67, wherein array has said printing plate a halftone cell that includes first and second dots, wherein said first and second dots are dissimilar.

42. (Currently Amended) The method of claim 1, wherein said overlapping further comprises creating said halftone image to an array that includes dots having different frequencies.

43. (Previously Added) The method of claim 8, wherein said placing of said first and second dots further comprises creating an array that includes dots having different frequencies.

44. (Currently Amended) The apparatus of claim 14, wherein said recordable medium printing plate further comprises dots having different frequencies.

45. (Currently Amended) A printing system, including:

a scanning circuit for reading image data from a source;

a processor in communication with said scanning circuit, wherein said processor receives and processes the image data to generate an image file;

an image setter in communication with said processor, wherein said image setter receives said image file from said processor and produces a plurality of dots on a recordable recording medium, said plurality of dots including a plurality of frequencies.

46. (Previously Added) A printing system, including:

a scanning circuit for reading image data from a source;

a processor in communication with said scanning circuit, wherein said processor receives and processes the image data to generate an image file;

an image setter in communication with said processor, wherein said image setter receives said image file from said processor and produces a plurality of dots on a recordable medium, said plurality of dots including a first and a second dot within a halftone cell, wherein at least a portion of said first dot overlaps at least a portion of said second dot.

47. (Previously Added) A printing system, including:

a scanning circuit for reading image data from a source;

a processor in communication with said scanning circuit, wherein said processor receives and processes the image data to generate an image file;

an image setter in communication with said processor, wherein said image setter receives said image file from said processor and produces a plurality of dots on a recordable medium, said plurality of dots including a first and a second dot within a halftone cell, wherein said first and second dots are dissimilar.

48. (Previously Added) A program product, comprising:

a program configured to produce a plurality of dots on a recordable medium, wherein said plurality of dots include multiple frequencies; and

a signal bearing medium bearing said program.

49. (Previously Added) The program product of claim 48, wherein said signal bearing medium includes at least one of a recordable medium and a transmission-type medium.

50. (New) The method of claim 34, wherein said integrating said fine and coarse frequency dots further includes generating a mid-tone dot.

51. (New) The method of claim 33, further comprising transitioning between said dots of different frequencies using a dot that includes a third pitch.

52. (New) The method of claim 33, wherein creating said printing plate includes generating at least one of said dots to include a frequency selected from a group consisting of at least one of: a fine pitch, a coarse pitch and an integrated pitch.

53. (New) The method of claim 33, wherein said creating said printing plate further includes generating a cross shape.

54. (New) The method of claim 33, wherein creating said printing plate further includes creating a smooth transition between said dots.

55. (New) The apparatus of claim 67, wherein said printing plate further includes a gradual transition between said dots having different frequencies.

56. (New) The apparatus of claim 67, wherein said printing plate further includes a dot having a third frequency, wherein said dot having said third frequency is positioned between said dots having different frequencies.

57. (New) The apparatus of claim 67, wherein said printing plate further includes a mid-tone dot positioned between said dots having different frequencies.

58. (New) The apparatus of claim 67, further comprising at least one of a threshold array and a halftone screen, wherein both said array and said screen are associated with said printing plate.

59. (New) The apparatus of claim 38, wherein said printing plate includes a substantially cross shape.

60. (New) A method for producing a halftone image using a program that executes on a processor, comprising creating a threshold array including a gradual transition between highlights and shadows of said threshold array.

61. (New) The program product of claim 48, wherein said program is further configured to gradually transition between said multiple frequencies.

62. (New) The method of claim 60, further comprising overlapping dots of said threshold array.

63. (New) The method of claim 60, further comprising including within said threshold array a plurality of dots that include at least one dissimilar characteristic selected from a group consisting of: frequency, shape, tone and orientation.

64. (New) The method of claim 60, further comprising using said threshold array to generate a halftone image.

65. (New) The method of claim 1, wherein producing said halftone image further includes producing at least one of a printing plate, a threshold array and a halftone screen.

66. (New) The method of claim 1, wherein said overlapping further includes generating a cross shape.

67. (New) An apparatus comprising a printing plate that includes halftone dots, wherein said dots include different frequencies.

68. (New) An apparatus comprising a threshold array that includes a highlight and a shadow region, wherein said threshold array further includes a gradual transition between said highlight and shadow regions.

69. (New) The apparatus of claim 68, wherein said threshold array further includes overlapped dots.

70. (New) The apparatus of claim 68, wherein said threshold array further includes a plurality of dots that include at least one dissimilar characteristic selected from a group that consists of: frequency, shape, tone and orientation.

71. (New) The printing system of claim 45, further comprising including a smooth transition between said plurality of dots.

72. (New) The printing system of claim 45, wherein said recording medium further includes at least one medium selected from a group consisting of: a threshold array, a halftone screen and a printing plate.

73. (New) The apparatus of claim 14, further comprising at least one of a threshold array and a halftone screen, wherein both said array and said screen are associated with said printing plate.

74. (New) The apparatus of claim 20, further comprising at least one of a threshold array and a halftone screen, wherein both said array and said screen are associated with said printing plate.

75. (New) A program product, comprising:

 a program configured to produce a threshold array that includes a highlight and a shadow region, wherein the threshold array further includes a smooth transition between said highlight and said shadow region; and
 a signal bearing medium bearing said program.

76. (New) The program product of claim 75, wherein said signal bearing medium includes at least one of a recordable medium and a transmission-type medium.
